

IN THE CLAIMS

Claims 1-75 (Canceled)

76. (Currently amended) A method of downregulating expression of a target gene in an RNA stress response-competent cell, comprising:

introducing into the cell an expression vector encoding a double stranded RNA corresponding to the target gene such that said double stranded RNA is expressed and expression of said target gene is specifically downregulated,

wherein intracellular expression of said double stranded RNA in said stress response-competent cell does not induce a detectable RNA stress response, and

wherein transfection of the same double stranded RNA produced outside the cell induces an RNA stress response in the RNA stress response-competent cell when administered at a comparable level.

77. (Canceled)

78. (Withdrawn) The method of claim 76, wherein said target gene is an endogenous gene.

79. (Previously presented) The method of claim 76, wherein said target gene is a pathogen gene.

80. (Previously presented) The method of claim 76, wherein said stress-competent cell is a vertebrate cell.

81. (Previously presented) The method of claim 80, wherein said vertebrate stress-competent cell is a mammalian cell.

82. (Previously presented) The method of claim 76, wherein said double stranded RNA is expressed as a single transcript that contains an inverted repeat.

83. (Withdrawn) The method of claim 76, where said double stranded RNA is formed from two separate transcripts expressed from two promoters.

84. (Withdrawn) The method of claim 83, wherein said double stranded RNA is transcribed from the same nucleic acid sequence using two convergent promoters.

85. (Withdrawn) The method of claim 77, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 30 nucleotides.

86. (Withdrawn) The method of claim 85, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 50 nucleotides.

87. (Withdrawn) The method of claim 86, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 75 nucleotides.

88. (Withdrawn) The method of claim 87, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 100 nucleotides.

89. (Withdrawn) The method of claim 88, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 200 nucleotides.

90. (Previously presented) The method of claim 76, wherein expression of said target gene is decreased at least 50%.

91. (Previously presented) The method of claim 90, wherein expression of said target gene is decreased 90%.

92. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by testing for nicked DNA using a TUNEL assay.

93. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by testing for activation of protein kinase R (PKR).

94. (Withdrawn) The method of claim 93, wherein PKR activation is detected by testing for phosphorylation of EIF2alpha.

95. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by testing for induction and/or activation of 2'5'oligoadenylate synthetase (OAS).

96. (Withdrawn) The method of claim 95, wherein activation of 2'5'OAS is detected by ribosomal RNA fragmentation.
97. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by testing induction and/or activation of interferon alpha, beta or gamma.
98. (Withdrawn) The method of claim 97, wherein induction of interferon alpha, beta or gamma is detected using an ELISA assay.
99. (Previously presented) The method of claim 76, wherein an RNA stress response or lack thereof is detected microscopically by looking for one or more cytopathic effects.
100. (Previously presented) The method of claim 99, wherein said one or more cytopathic effects are selected from the group consisting of detached cells, rounded cells, increased vacuoles and morphological changes, in comparison to untreated cells.
101. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by measuring the division rate of the transfected cells as compared to untreated cells.
102. (Withdrawn) The method of claim 76, wherein an RNA stress response or lack thereof is detected by assaying for apoptosis.

103. (Withdrawn) The method of claim 102, wherein said apoptosis assay is selected from the group consisting of reduction of MTT tetrazolium dye, Annexin V staining, propidium iodide staining, DNA laddering, PARP cleavage, caspase activation and assessment of cellular and nuclear morphology.

104-140. (Canceled)

141. (Currently amended) The method of claim ~~77~~ 76, wherein the region of the double stranded RNA that is present in double stranded conformation includes at least 20-25 nucleotides.